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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,815	03/06/2006	Josef Bader	ZAHFRI824US	4903
20210 7590 04/01/2009 DAVIS & BUJOLD, P.L.L.C. 112 PLEASANT STREET CONCORD, NH 03301				
EXAMINER				
KNIGHT, DEREK DOUGLAS				
ART UNIT		PAPER NUMBER		
3655				
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04/01/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/570,815

Applicant(s)

BADER, JOSEF

Examiner

DEREK D. KNIGHT

Art Unit

3655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/5/2009 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 14, line 6 recites the limitation "a first solid counter shaft and a second solid counter shaft". There is no description of the composition of the shaft in the original specification, and the drawing provide only one cut-away view of the counter shafts, which does not provide adequate description to conclude that the countershafts are solid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **REYNOLDS (US 5,609,062)** in view of **SANDIG (US 6,334,369)**.

Regarding **claim 14**: **REYNOLDS** discloses a range-change transmission comprising: an input shaft (118); a gearshift sleeve (76) having radially outer teeth, being rotationally fixed to and axially slidable along an end of the input shaft between at least first and second positions; a first solid counter shaft (80) and a second solid counter shaft (80) each having a first gear wheel (78) and a second gear wheel (82) integrally formed therewith; a loose gear wheel (74), having radially inner teeth and radially outer teeth, being rotationally supported by the input shaft; a drive output shaft (72) being coaxially aligned with the input shaft and the drive output shaft having radially inner teeth at an end located adjacent the input shaft; an output gear wheel (84) being integrally formed with the drive output shaft, and the output gear wheel engages the second gear wheels (82) of the first counter shaft and the second counter shaft; in the first position of the gearshift sleeve, the gearshift sleeve being at least partially located between the input shaft and the loose gearwheel such that the radially outer teeth of the gearshift sleeve engage with the radially inner teeth of the loose gear wheel and the

input shaft drives the output shaft via the first and the second counter shafts; in the second position of the gearshift sleeve, the radially outer teeth of the gearshift sleeve engage with the radially inner teeth of the drive output shaft so that the input shaft directly drives the drive output shaft via the gearshift sleeve.

REYNOLDS does not disclose first and second pressure combs, being secured to and solely carried by opposite sides-of the output gear wheel, maintaining the output gear wheel in axial alignment with the second gear wheels of the first and the second counter shafts.

SANDIG teaches gears of a transmission device being formed with pressure comb pairs (Fig. 14, 1584a, 1586a, and 1584b, 1586b).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the gears within the transmission of **REYNOLDS** to be formed with pressure combs in view of **SANDIG** to secure the axial position of the gears and to provide a uniform axial force transmission via both pairs of pressure combs (**SANDIG**, col. 10, ln. 31-34).

Regarding **claim 15**: **REYNOLDS** discloses a range-change transmission.

REYNOLDS does not disclose third and fourth pressure combs, carried by opposed sides of the loose gear wheel, maintaining the loose gear wheel in axial alignment with the first gear wheels of the first and the second counter shafts.

SANDIG teaches gears of a transmission device being formed with pressure comb pairs (Fig. 14, 1584a, 1586a, and 1584b, 1586b) to secure the axial position (**SANDIG**, col. 10, lines 12-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the gears within the transmission of **REYNOLDS** to be formed with pressure combs in view of **SANDIG** to secure the axial position of the gears and to provide a uniform axial force transmission via both pairs of pressure combs (SANDIG, col. 10, ln. 31-34).

Regarding **claim 16**: **REYNOLDS** discloses a range-change transmission.

REYNOLDS does not disclose the first and the second counter shafts being maintained in axial position, relative to the drive output shaft, by at least the first and the second pressure combs.

SANDIG teaches gears of a transmission device being formed with pressure comb pairs (Fig. 14, 1584a, 1586a, and 1584b, 1586b) to secure the axial position (SANDIG, col. 10, lines 12-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the gears within the transmission of **REYNOLDS** to be formed with pressure combs in view of **SANDIG** to secure the axial position of the gears and the respective shafts to which the gears are attached, while providing a uniform axial force transmission via both pairs of pressure combs (SANDIG, col. 10, ln. 31-34).

Regarding **claim 18**: **REYNOLDS** discloses a range-change transmission with a housing (H).

REYNOLDS does not disclose the first and the second counter shafts being only radially supported by the housing.

SANDIG teaches the shafts (1532a/ 1532b) of the gears being only radially retained by bearings (1534a/ 1534b), see Fig. 14.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the counter shaft mounting within the transmission of **REYNOLDS** such that the shafts would be only radially supported in view of **SANDIG** to allow the pressure combs to secure the axial position of the gears and the respective shafts to which the gears are attached, while providing a uniform axial force transmission via both pairs of pressure combs (**SANDIG**, col. 10, ln. 31-34).

Claims **17 and 19-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **REYNOLDS (US 5,609,062)** in view of **SANDIG (US 6,334,369)** as applied to claims 14-16 and 18 above, and further in view of **LOEFFLER (US 4,807,493)**.

Regarding **claim 17**: The combination of **REYNOLDS - SANDIG** discloses a range-change transmission with a housing (H) and a bearing supporting the drive output shaft.

The combination of **REYNOLDS - SANDIG** does not disclose the type of bearing that is supporting the drive output shaft.

LOEFFLER teaches using a double conical-roller bearing (172/174) to support the drive output shaft (120) of the transmission.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the bearing of **REYNOLDS - SANDIG** with the double conical-roller bearing taught by **LOEFFLER** because substituting one bearing with

another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Regarding **claim 19**: The combination of **REYNOLDS - SANDIG** discloses a range-change transmission wherein the first and the second counter shafts are only radially supported by a housing via bearings (1534a/ 1534b).

The combination of **REYNOLDS - SANDIG** does not disclose the type of bearing.

LOEFFLER teaches using roller bearings (110) to support its countershafts (106/108).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the bearing of **REYNOLDS - SANDIG** with the roller bearing taught by **LOEFFLER** because substituting one bearing with another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Regarding **claims 20 and 22**: The combination of **REYNOLDS - SANDIG** discloses a range-change transmission comprising: an input shaft (118); a gearshift sleeve (76), having radially outer teeth, being rotationally fixed to and axially slidable along an end of the input shaft between at least first and second positions and a neutral position; a first solid counter shaft (80) and a second solid counter shaft (80) each having an integrally formed first gear wheel (78) and an integrally formed second gear wheel (82); a loose gear wheel (74), having radially inner teeth and radially outer teeth, being rotatably supported by the input shaft and axially movable therealong; a drive output shaft (72) being coaxially aligned with an input shaft, the drive output shaft

having radially inner teeth at a first end located adjacent the input shaft and bearings radially and axially support the drive output shaft within a housing (H); an output gear wheel (84) being fixedly secured to the drive output shaft, and the output gear wheel engaging the second gear wheels of the first counter shaft and the second counter shaft; in the first position of the gearshift sleeve, the gearshift sleeve being at least partially located between the input shaft and the loose gear wheel such that the radially outer teeth of the gearshift sleeve engage with the radially inner teeth of the loose gear wheel and the input shaft drives the output shaft via the first and the second counter shafts; in the second position of the gearshift sleeve, the gearshift sleeve being at least partially received within a the first end of the drive output shaft and the loose gear wheel such that the radially outer teeth of the gearshift sleeve engage with the radially inner teeth of the drive output shaft so that the input shaft directly drives the drive output shaft via the gearshift sleeve; a first pair of pressure combs are carried by opposed sides of the loose gear wheel for maintaining the loose gear wheel in axial alignment with the first gear wheels of the first and the second counter shafts, and the first pair of pressure combs are laterally located on outer teeth of the loose gear wheel for solely centering the loose gear wheel relative to the first gear wheels of the first and the second counter shafts and concentrically with respect to the input shaft such that the loose gear wheel can move axially relative to the input shaft; and a second pair of pressure combs are carried by opposed sides of the output gear wheel for maintaining the output gear wheel in axial alignment with the second gear wheels of the first and the second counter shafts.

The combination of **REYNOLDS - SANDIG** does not disclose the bearings that radially and axially support the drive output shaft within the housing being double conical-roller bearings.

LOEFFLER teaches using a double conical-roller bearing (172/174) to support the drive output shaft (120) of the transmission.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the bearing of **REYNOLDS - SANDIG** with the double conical-roller bearing taught by **LOEFFLER** because substituting one bearing with another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Regarding **claim 21**: The combination of **REYNOLDS - SANDIG** discloses a range-change transmission wherein the first pair of pressure combs are arranged closely adjacent the outer teeth of the loose gear wheel and have lateral pressure surfaces which engage with lateral pressure surfaces on the first gear wheels of the first and the second counter shafts and the second pair of pressure combs are arranged closely adjacent the outer teeth of the output gear wheel and have lateral pressure surfaces which engage with lateral pressure surfaces on the second gear wheels of the first and the second counter shafts.

Response to Arguments

Applicant's arguments filed 1/5/2009 have been fully considered but they are not persuasive. Applicant argues that the gears of their invention are integrally formed on the countershafts and that Reynolds does not disclose this limitation. Examiner

disagrees. Reynolds shows the gears (78) and (82) being integrally formed with the counter shaft (80). Therefore, there is no axial or rotational play between the counter shafts and their respective gears. Applicant argues that the bearing Reynolds shows to support the output shaft does not teach or disclose the claimed invention. Examiner agrees that Reynolds does not disclose the type of bearing, and examiner uses the Loeffler reference to overcome this lack of disclose.

Applicant argues that there would be no reason or motivation to combine the pressure combs taught by Sandig with the transmission of Reynolds because Reynolds shows a mechanism that performs the same function as the pressure combs. Examiner would like to point out that one of ordinary skill in the art would be able to substitute one method for the other to achieve the predictable result of maintaining the axial position of the gears/ shafts.

In response to applicant's argument that the base reference of Reynolds would need to be significantly materially altered and rearranged in order to be combined with the Sandig reference, Examiner would like to point out that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEREK D. KNIGHT whose telephone number is (571)272-7951. The examiner can normally be reached on Mon - Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. D. K./
Examiner, Art Unit 3655

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